

**Document #433 Kain, Nancy Individual**

**From:** Nancy [antdancing@cox.net]  
**Sent:** Thursday, February 17, 2005 1:10 PM  
**To:** moabcomments  
**Subject:** Moab waste pile  
Sirs,

Our shameful policy decision to ignore the Kyoto accord should not be followed by another enviornmental abuse. Please reconsider.

Nancy Kain  
1733 Leisure World  
Mesa, AZ 85206

**Document #444 Owens, Stephen A. Arizona Department of Environmental Quality**

Feb. 17, 2005 2:00PM

No. 0147 P. 1



*#444, p1*  
**Fax Cover Sheet**

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**Date:** February 17, 2005

**Total Pages:** 4 + cover

**To:** Mr. Don Metzler

**Phone:** 800-637-4575

**Fax:** 970-248-7636

**From:** Stephen A. Owens, Director

**Phone:** 602-771-2203

**Fax:** 602-771-2218

**Re:** Moab Federal Project – Review of DEIS

**CC:**

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**Comments:**

Please see attached, thank you.

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Feb. 17. 2005 2:00PM

No. 0147 P. 2



Janet Napolitano  
Governor

ARIZONA DEPARTMENT  
OF  
ENVIRONMENTAL QUALITY

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Stephen A. Owens  
Director

February 17, 2005

# 444, p2

Mr. Don Metzler  
Moab Federal Project Director  
U.S. Department of Energy  
2597 B ¼ Road  
Grand Junction, CO 81503

Re: Review of DEIS for Remediation of Moab Uranium Mill Tailings

Dear Mr. Metzler:

The Arizona Department of Environmental Quality (ADEQ) has reviewed the U.S. Department of Energy's (DOE) *Remediation of the Moab Uranium Mill Tailings, Grand and San Juan Counties, Utah, Draft Environmental Impact Statement (DEIS)* which addresses contamination from historical uranium ore processing. The agency appreciates the opportunity to comment and has outlined its concerns below.

Preferred Alternative

The DEIS states that DOE has not identified a preferred alternative at this time. The State of Arizona strongly supports the complete removal of the tailings and contaminated materials from the site and believes either the Klondike Flats or the Crescent Junction locations are superior to the White Mesa Mill site due to transportation, disposal, and environmental justice issues.

Alternatives

The DEIS outlines two major alternatives:

- *On-site disposal*, which would involve stabilization and capping of the existing pile and would take 7-10 years to complete at a cost of \$166 million.
- *Off-site disposal* would take upwards of 8 years with costs ranging from \$329 to \$464 million, depending on the choice of final disposal location and transportation option. DOE has identified three locations in Utah as potential off-site disposal locations:
  - Klondike Flats, about 18 miles northwest of the site;
  - Crescent Junction, approximately 30 miles northwest of the site; and
  - White Mesa Mill, approximately 85 miles south of Moab and within 6 miles of the Ute Mountain Reservation and the communities of White Mesa and Blanding, UT.

While the costs for off-site removal are 2-3 times higher, the actual timeframe for completion of the tailings removal action is shorter. ADEQ strongly encourages the DOE to consider off-site disposal as the preferred alternative for the following reasons. The proximity of the pile to the

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Mr. Don Metzler  
DEIS Moab Uranium Mill Tailings  
February 17, 2005

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Colorado River and the potential for the river to migrate are key reasons to consider complete removal. Secondly, the need for stabilization of the site and the fact that on-site stabilization *will not eliminate* the continual source of contamination to groundwater, makes off-site disposal clearly the more comprehensive and environmentally protective alternative, in the long-term.

Of the three sites analyzed, both the Klondike Flats and Crescent Junction sites are preferable to the White Mesa Mill location. While both Klondike Flats and Crescent Junction will require construction of new disposal cells, both sites are in remote, sparsely populated areas with large tracts of state and federal land. Both are accessible by rail which would expedite the removal versus transport by truck. The environmental impacts to both sites will be similar.

The White Mesa Mill site is an existing disposal site but it is also the farthest from the Moab location. Rail access is not available so transportation options focused on truck transport or slurry pipeline. Use of the White Mesa Mill site would result in unique cultural and environmental justice impacts given its proximity to the Ute Mountain Reservation and the communities of White Mesa and Blanding. In addition, there are rich cultural resources that would be disturbed preparing the site for additional storage and the pipeline corridor.

Lastly, DOE estimates the site contains 11.9 million tons or 8.9 million cubic yards of material. There is limited discussion in the DEIS as to how these values were obtained other than references to field characterization studies, DOE's experience with similar sites and historical data. While DOE acknowledges there could be a significant difference between the calculated and actual tailings volume, there is *no discussion* regarding the impact of quantity discrepancies on the remediation efforts. The pile characteristic uncertainties may not impact the final engineering design but could dramatically affect final surface remediation costs and scheduling. For example, if the DOE has dramatically underestimated the volume of the pile or contaminated soils, the amount and hauling time of cover material for on-site disposal will be affected. If off-site disposal is selected as the preferred option, these uncertainties could have considerable impacts on the transportation options.

#### Transportation

For off-site disposal, three transportation modes were evaluated: truck, rail and slurry pipeline. Truck transport would use existing US-191 as the primary transportation route for hauling contaminated materials off-site and hauling borrow materials to the selected disposal site. An existing rail line runs from the Moab site north along US-191 and connects near I-70. Rail access exists to both Klondike Flats and Crescent Junction but would require some upgrades and additional rail sidings. Rail access is not available to White Mesa Mill and the option was not analyzed for that site due to technical difficulties, potential impacts and high costs. Lastly, the DEIS looked a slurry pipeline delivery to each of the potential disposal sites.

Given the usual highway tonnage limitations for truck transport, ADEQ questions DOE's time estimates for moving the material by truck, particularly in light of the uncertainties in the actual volumes. At a minimum, truck transport would noticeably increase truck traffic on US-191 for upwards of 8 years. If White Mesa Mill is selected, the truck traffic will travel through central

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Mr. Don Metzler  
DEIS Moab Uranium Mill Tailings  
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Moab, already congested with local and tourist traffic. The rail option, after the relatively minor grade improvements and additional sidings, could move vast quantities of material with little or no impact on US-191 and would seem to be the fastest and most efficient option. Given the types of pollutants being handled, the slurry pipeline does not appear to be a good option and at the very least, DOE should require additional investigation into potential environmental impacts in the event of inevitable pipeline leaks or failures.

#### Groundwater Remediation

Groundwater remediation will be conducted under both the on-site and off-site disposal alternatives. As presented in the DEIS, the proposed system will cost approximately \$11 million to design and construct, with an annual operating budget of over \$900,000. Construction will take approximately 5 years and the system will be in operation for 75-80 years.

The DEIS indicates that DOE proposes to implement an active remediation system to intercept and control discharge of contaminated groundwater to the Colorado River. Because there are no alternatives discussed regarding groundwater remediation, there are few details of the actual remediation plan. The DEIS indicates that ammonia is the major contaminant of concern, however, "roll front" uranium deposits typically contain a variety of mineral species. Other potential contaminants include uranium; its daughter products radon and radium; molybdenum; copper; selenium; vanadium; and arsenic. However, there is no discussion of impact of other contaminants discharging to the Colorado River. There is mention of the contamination plume but no details regarding size, movement, or levels.

Based solely on the overview in the DEIS, ADEQ has the following comments regarding the proposed groundwater remediation strategy:

- » It is not clear why it will take up to five years to intercept and contain the plume, given the low recharge rate estimates. The DEIS states that the pump and treat system will operate for 75-80 years but elsewhere it states the "groundwater under the Moab site would return to background levels after 150 years." Does this mean that following the 75-80 years of pump and treat, an additional 70-80 years of natural attenuation is needed to restore groundwater to natural background?
- » If the preferred alternative is off-site disposal, removal of the tailings will involve the stripping off of layers that will expose the underlying material to leaching. How will DOE, during the active removal, limit the exposed material to leaching of additional contaminants?

#### Surface Water Quality

Because of the vital role of the Colorado River to the lives of millions in both the Upper and Lower Basin States, ADEQ strongly supports the state of Utah's request that the *chronic* surface water quality standards be used to ensure protection of aquatic species. This is particularly true in the case of ammonia which is one of the most prevalent contaminants in the groundwater and is the constituent of greatest ecological concern that is discharging into the Colorado River and adjacent backwaters. The groundwater contamination has been ongoing for decades and has

Remediation of the Moab Uranium Mill Tailings, Grand and San Juan Counties, Utah  
Final Environmental Impact Statement

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Mr. Don Metzler  
DEIS Moab Uranium Mill Tailings  
February 17, 2005

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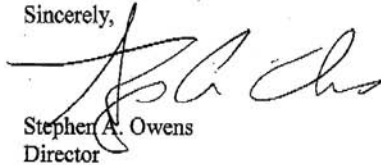
# 444, p5

been leaching into the river for decades as well. This has created a *chronic water quality condition* that acute water quality standards are not designed to protect against. The final Environmental Impact Statement should also Utah's surface water quality standards in addition to the federal Safe Drinking Water Act standards to ensure proper protection of human health, aquatic life and wildlife. The DEIS clearly states the aquifer is already compromised for drinking water purposes. Arizona is primarily concerned with attaining and maintaining a water quality that is protective of aquatic life and wildlife.

DOE's primary justification for using the less protective "acute" standard appears to be that use of the "chronic" standard would lengthen the duration of the groundwater remediation strategy. The DOE estimates it will take up to 80 years to reach the remediation target of 3 mg/L for ammonia but believes the remediation system will result in surface water quality that is protective of aquatic species within 5 years after the system begins treatment. It is unclear how these two statements can be true given that aquatic life can tolerate 3 mg/L as ammonia under a very narrow range of physical conditions.

The State of Arizona appreciates the opportunity to review and comment on this important project. As you know, Arizona counts on the Colorado River for fishing, recreation and providing drinking water to millions of its citizens. It is ADEQ's responsibility to the people of Arizona to ensure that water quality problems are identified and addressed appropriately, especially in a state like ours where water is such a precious and limited resource.

Sincerely,



Stephen A. Owens  
Director

Document #445 Stapleton, Maureen A. San Diego County Water Authority



**San Diego County Water Authority**

4677 Overland Avenue • San Diego, California 92123-1233  
(858) 522-6600 FAX (858) 522-6568 www.sdcwa.org

February 17, 2005

Moab DEIS Comments  
U.S. Department of Energy Grand Junction  
2597 B<sup>1</sup>/<sub>4</sub> Road, Grand Junction, CO 81503

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Santa Fe Irrigation District  
South Bay Irrigation District  
Vallecitos Water District  
Valley Center  
Municipal Water District  
Vista Irrigation District  
Yuima  
Municipal Water District

**OTHER  
REPRESENTATIVE**

County of San Diego

RE: *Remediation of the Moab Uranium Mill Tailings, Grand and San Juan Counties, Utah,  
Draft Environmental Impact Statement (EIS)*

Dear Mr. Metzler:

The San Diego County Water Authority (Water Authority) is a regional public agency responsible for providing wholesale supplemental water supplies to the more than 3 million residents of San Diego County, California. Last year, Colorado River water comprised approximately 66 percent of the total supply served to these people. Historically, San Diego County has relied upon Colorado River water supplies for 50 to 100 percent of its total water supply. Consequently, activities that affect Colorado River water quality are of vital interest.

The Water Authority has reviewed the draft Environmental Impact Statement (EIS) for Remediation of the Moab Uranium Mill Tailings, Grand and San Juan Counties, Utah. The EIS describes various alternatives for remediating contamination resulting from the uranium mill tailings located immediately adjacent to the Colorado River. The current location of this approximately 12 million-ton waste pile results in the continued discharge of contaminants to surface and ground waters directly connected to the Colorado River, a prime source of drinking and irrigation water for tens of millions of people in the downstream states of Arizona, Nevada, and California, as well as the Republic of Mexico.

This demonstrated source of water supply contamination has been of concern to the Water Authority for a number of years. Because of continued heavy reliance on Colorado River water, the Water Authority is opposed to any remediation alternative that would leave the tailings pile in its present location. In addition, site remediation must include increased water quality monitoring and active measures to cleanse groundwater of contaminants to meet applicable water quality standards.

Relocation of the tailings pile and groundwater restoration would help to protect the valuable water resources of the Colorado River for future generations. This water supply and the health of millions of people are too important to leave to chance. Moving the pile would lessen these risks significantly. Please retain the Water Authority on your mailing list to receive future notifications regarding this project. Thank you.

Sincerely,

Maureen A. Stapleton  
General Manager

*A public agency providing a safe and reliable water supply to the San Diego region*

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Document #446 Nelson, Charles Individual

Speed Message

#446, pl

To Moab DEIS Comments  
From Charles Nelson  
■ U.S. Department of Energy, 2597 A<sup>3/4</sup> Road ■ P.O. Box 940  
■ Grand Junction, CO 81503 ■ Moab, Utah 84532-0940  
Subject Comment on Atlas Tailings Draft EIS

Date February 12, 2005

As a Resident of Grand County, Utah I am concerned how the  
Atlas Tailings will be removed because of the dust from the  
Tailings in the air when the Pile is disturbed. There is concern  
that it is said to be toxic to the Health of people and Wildlife,  
therefore the situation needs to be taken in advisement by  
Knowledgeable People.

Sincerely,

Charles Nelson

P.S. Please consider this Newspaper Article Opinion from  
The Salt Lake Tribune - 1/30/05

Signed \_\_\_\_\_

Wilson Jones  
1100 2nd St. PHOTOCOPIA USA  
Carbonless

88

AA4

The Salt Lake Tribune OPINION Sunday, January 30, 2005

# No sound reasons exist to move the Moab tailings pile

The Jan. 15 *Tribune* reported that if the biblical flood returns, in addition to covering the whole town of Moab with water, it will wash the Moab tailings pile into the Colorado River. Thus the magic words were again spoken: radioactive tailings, Colorado River, drinking water.

These words silence any discussion of whether it is worthwhile to spend several hundred million dollars moving an 11 million ton pile of modestly radioactive dirt from one place to another.

That pile is the residue from the Atlas uranium mill which operated nearby from 1950s to 1984. The federal government is committed to protecting all such piles in the U.S. by covering them with soil and vegetation to prevent human contact and prevent groundwater from flowing through them. It will cost about 200 million federal dollars to cover and stabilize the Moab pile.

The principal toxic materials

everywhere. Every breath an adult takes contains about 10 radon atoms. Covering the pile with dirt reduces the emission of radon gas, but not to zero.

The approximately 5,000 tons of ammonia in the pile, although 20 times as dilute as the household cleaners sold in supermarkets, is a strong enough ammonia solution to be toxic to fish. Current plans to cap the waste include plans to prevent ammonia from seeping into the river.

Those who want the dirt pile moved to another location before it is covered with soil and protected from water seepage, including apparently all of Utah's elected officials, fear that the pile will leak poisons into Lake Powell, mostly by rainfall seeping through it, but based on the article in the Jan. 15 *Tribune*, the fear that a mega-flood could wash it all into the river adds to the urgency of moving it.

What would happen if, for some reason, somehow, the whole pile was transferred into

the Colorado River and flowed into Lake Powell? There, the solids would all settle to the bottom and be covered by the mud, sand and gravel which the Colorado River deposits in the upstream end of Lake Powell every year. That annual deposit is roughly five times the size of the Moab tailings pile. All of the insoluble radioactive materials would be buried in that mud pile.

The volume of Lake Powell, when full, is about 4,900 times the volume of the tailings pile, so the ammonia, the principal soluble toxic material in the pile, would be diluted by a factor of 4,900, easily meeting the federal water quality standard for ammonia. During the mega-flood, while the pile was being transported to and mixed with Lake Powell, the waters would be very muddy, the ammonia would not be totally diluted, so there would probably be fish kills, and the water would be unsuitable for drinking.

But in a flood strong enough

we want to spend that much to correct some poor land use planning and remove something unsightly, we should be honest enough to admit that is our reason and should stop speaking the magic words, radioactive waste, Colorado River, drinking water.

My position is not pro-nuclear; it is anti-hysteria and anti-deception. Utah, the United States and the world have real, important environmental problems we should deal with. Squandering several hundred million dollars by moving the Moab tailings pile before covering it is not good environmentalism, nor good government.

Noel de Nevers is a registered chemical engineer in Utah. For a longer, more detailed version, send an e-mail request to Noel.deNevers@utah.edu. No hate mail, please.

to submerge Moab, that would be the least of our worries. When the flood was over, the pile would be safely stored at the bottom of Lake Powell, the insoluble radioactive materials would stay there and Lake Powell water would be safe to drink.

If we move an 11 million ton pile of mildly radioactive dirt somewhere else and cover it, it will be just as dangerous to those who would dig it up as it is at its current location. It will continue to emit modest amounts of radon gas for geologic time, wherever it is. It poses no significant threat to human or animal health if some or all of it leaks into the Colorado River.

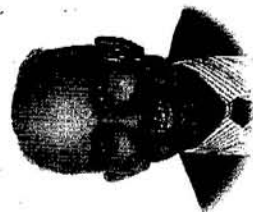
If the pile poses no more threat to human health where it is than it would somewhere else, then it makes little sense to spend several hundred million additional dollars moving it. If

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#446, p6

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in the pile are radium, uranium and ammonia. The approximately 10 pounds of radium and the about 1,000 tons of uranium in the pile are practically insoluble in water; they can only get out of the piles if someone digs them up. But radium emits radon gas, which can cause lung cancer.

Radon oozes out of the ground in minute quantities